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Access DB# _____

RECEIVED

SEARCH REQUEST FORM

MD-1 2001

Scientific and Technical Information Center

(STIC)

Requester's Full Name: RICHARD SCHNIZER Examiner #: 76557 Date: 2/27/04
 Art Unit: 1635 Phone Number 30 2-0762 Serial Number: 09/877,999
 Mail Box and Bldg/Room Location: Rem 2C18 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: WATER SOLUBLE STABILIZED SELF-ASSEMBLED POLYELECTROLYTES

Inventors (please provide full names): MAXIME RANGER JEAN CHRISTOPHE LEROUX

Earliest Priority Filing Date: 6/8/01

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

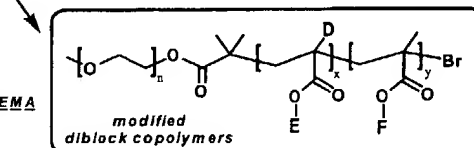
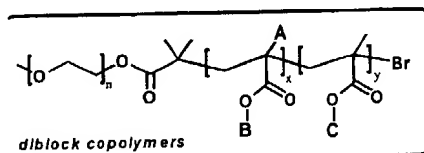
Please search these
polymers:

Let $n = 1-800$
 $x = 1-300$
 $y = 1-300$

IBMA \rightarrow MAA
 HCl, dioxane
 Δ

or

DMAEMA \rightarrow TMAEMA
 HCl, dioxane
 Δ



A, D = alkyl, aryl or H
 B = tert-butyl (tBMA) and dimethylaminoethyl (DMAEMA)
 C = alkyl, aryl or any hydrophobic moieties
 E = H (MAA) or (trimethylammonium)ethyl (TMAEMA)
 F = alkyl, aryl or any hydrophobic moieties

STAFF USE ONLY

Type of Search

Vendors and cost where applicable

Searcher: _____	NA Sequence (#) _____	STN <u>803.85</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: <u>3/4</u>	Structure (#) <u>4</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>3/5</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>400 90</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>45</u>	Other _____	Other (specify) _____

D. block copolymer Structure 1

Schnizer 09/877,999

March 5, 2004

=> d que 138

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OR 148587-97-7/CRN OR 148947-96-0/CRN OR 14
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L27      2756 SEA FILE=REGISTRY ABB=ON  PLU=ON  585-07-9/CRN
L33      219 SEA FILE=REGISTRY ABB=ON  PLU=ON  L19 AND L24 AND (L26 OR L27)

L34      32 SEA FILE=REGISTRY ABB=ON  PLU=ON  L33 AND NC=3
L37      14 SEA FILE=REGISTRY ABB=ON  PLU=ON  L34 AND (BLOCK? OR DIBLOCK?)

L38      12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37
  
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L38 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:519827 HCAPLUS
DOCUMENT NUMBER: 139:231039
TITLE: ATRP synthesis of amphiphilic random, gradient, and
block copolymers of 2-(dimethylamino)ethyl
methacrylate and n-butyl methacrylate in aqueous media
AUTHOR(S): Lee, Sang Beom; Russell, Alan J.; Matyjaszewski,
Krzysztof
CORPORATE SOURCE: Department of Chemical and Petroleum Engineering &
Center for Biotechnology and Bioengineering,
  
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SOURCE: University of Pittsburgh, Pittsburgh, PA, 15261, USA
Biomacromolecules (2003), 4(5), 1386-1393
CODEN: BOMAF6; ISSN: 1525-7797

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Amphiphilic random, gradient, and block copolymers of 2-(dimethylamino)ethyl methacrylate (DMAEMA) and Bu methacrylate (BMA) were synthesized by atom transfer radical polymn. (ATRP) in water/2-propanol mixts. using a methoxy-poly(ethylene glycol) (MPEG) (Mn = 2000) macroinitiator. Kinetic studies indicate that the copolymn. is well controlled with mol. wts. increasing linearly with conversion. Copolymers with mol. wts. up to Mn = 34 000 and low polydispersities (Mw/Mn = 1.11 - 1.47) were prepd. The reactivity ratios were calcd. for the copolymns. catalyzed by CuBr/bpy, (rDMAEMA = 1.07, rBMA = 1.24). The thermosensitivity and aggregation properties of the random, gradient, and block copolymers significantly depended on the architecture of the copolymers. The lower crit. soln. temp. of MPEG-b-PDMAEMA84 was 38 .degree.C (5 wt. % in water).

CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36

IT **260426-23-1P**, 2-(Dimethylamino)ethyl methacrylate-oxirane block copolymer, monomethyl ether, block
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (assumed monomers; ATRP synthesis of amphiphilic random, gradient, and block copolymers of 2-(dimethylamino)ethyl methacrylate and n-Bu methacrylate in aq. media)

IT **260426-23-1P**, 2-(Dimethylamino)ethyl methacrylate-oxirane block copolymer, monomethyl ether, block
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (assumed monomers; ATRP synthesis of amphiphilic random, gradient, and block copolymers of 2-(dimethylamino)ethyl methacrylate and n-Bu methacrylate in aq. media)

RN 260426-23-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with oxirane, monomethyl ether, block (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

H₃C-OH

CM 2

CRN 213599-36-1

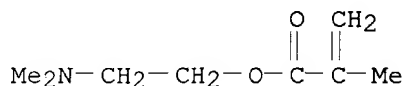
CMF (C8 H15 N O2 . C2 H4 O)x

CCI PMS

CM 3

CRN 2867-47-2

CMF C8 H15 N O2



CM 4

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:57436 HCAPLUS

DOCUMENT NUMBER: 138:369264

TITLE: Solvent-free synthesis and purification of poly[2-(dimethylamino)ethyl methacrylate] by atom transfer radical polymerization

AUTHOR(S): Pantoustier, Nadege; Moins, Sebastien; Wautier, Michael; Degee, Philippe; Dubois, Philippe

CORPORATE SOURCE: Laboratory of Polymeric and Composite Materials, University of Mons-Hainaut, Mons, Belg.

SOURCE: Chemical Communications (Cambridge, United Kingdom) (2003), (3), 340-341

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Solvent-free synthesis of well-defined poly[2-(dimethylamino)ethyl methacrylate] (PDMAEMA) (co)polymers was performed by atom transfer radical polymn. conducted under very mild conditions (in bulk at 25.degree.). The pH-dependence and the thermo-responsive behavior of PDMAEMA in aq. soln. were operated to isolate and purify the (co)polymers without using any org. solvent or further catalyst extn. The viscosity in aq. soln. of so-purified PDMAEMA homopolymers and their block copolymers with poly(ethylene glycol) (PEG) was studied as a function of molar mass and concn. and a typical polyelectrolyte behavior was obsd. these catalyst-deprived polycations are able to form stable and non toxic complexes with DNA, showing good transfection efficacies in gene therapy.

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 63

IT 260426-23-1P

RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (diblock; solvent-free synthesis and purifn. of poly[2-(dimethylamino)ethyl methacrylate] by atom transfer radical polymn.)

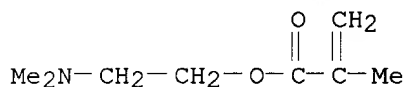
IT 260426-23-1P

RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic

preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(diblock; solvent-free synthesis and purifn. of poly[2-
(dimethylamino)ethyl methacrylate] by atom transfer radical polymn.)
RN 260426-23-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with
oxirane, monomethyl ether, block (9CI) (CA INDEX NAME)
CM 1
CRN 67-56-1
CMF C H4 O

H₃C-OH

CM 2
CRN 213599-36-1
CMF (C8 H15 N O2 . C2 H4 O)x
CCI PMS
CM 3
CRN 2867-47-2
CMF C8 H15 N O2



CM 4
CRN 75-21-8
CMF C2 H4 O



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:964222 HCAPLUS
DOCUMENT NUMBER: 138:44704
TITLE: Water-soluble stabilized self-assembled
polyelectrolytes
INVENTOR(S): Ranger, Maxime; Leroux, Jean-Cristophe
PATENT ASSIGNEE(S): Labopharm Inc., Can.
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002100439	A1	20021219	WO 2002-CA855	20020607
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003059398	A1	20030327	US 2001-877999	20010608

PRIORITY APPLN. INFO.: US 2001-877999 A 20010608

AB The present invention is directed toward water-sol. supramol. self-assemblies and a process for their prepn. via micellization of polyelectrolytes through the use of hydrophobic monomeric units. In this invention the polyelectrolyte segment ultimately forms the core of the supramol. assembly whereas the shell consists of uncharged hydrophobic polymers or oligomers. It has been detd. that the inclusion of the hydrophobic co-monomers to the polyelectrolyte segment forming the micelle core leads to a structure of enhanced stability. For example, prepn. and micellar properties of poly(ethylene glycol)-block-poly(N,N-dimethylaminoethane methacrylate-co-Et methacrylate) were presented.

IC ICM A61K047-48
 ICS C07K019-00; C12N015-88; A61K009-127; B29C039-24; G01N033-543

CC 63-6 (Pharmaceuticals)
 Section cross-reference(s): 38

IT **386737-64-OP 386737-65-1P** 478408-04-7P
 RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (prepn. and micellization of polyelectrolytes through hydrophobic monomeric units for water-sol. stable self-assemblies as drug carriers)

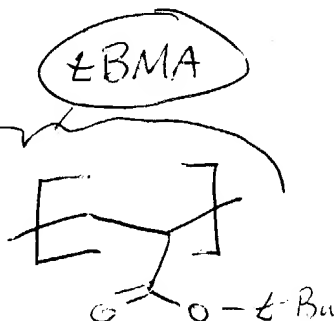
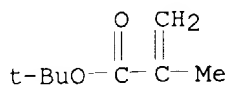
IT **386737-64-OP 386737-65-1P**
 RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (prepn. and micellization of polyelectrolytes through hydrophobic monomeric units for water-sol. stable self-assemblies as drug carriers)

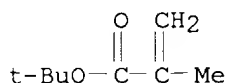
RN 386737-64-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethyl 2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 585-07-9
 CMF C8 H14 O2



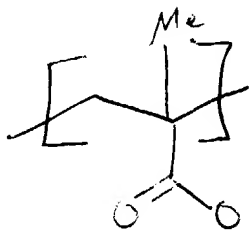
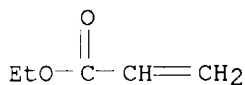


EBMA

CM 2

CRN 140-88-5

CMF C5 H8 O2



where C = Alkyl (ethyl)

CM 3

CRN 75-21-8

CMF C2 H4 O



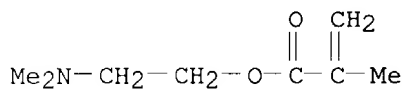
RN 386737-65-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with ethyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 2867-47-2

CMF C8 H15 N O2

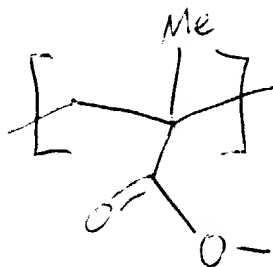
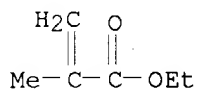


} DMAEMA

CM 2

CRN 97-63-2

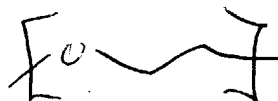
CMF C6 H10 O2



where C = Alkyl = Ethyl

CM 3

CRN 75-21-8
CMF C2 H4 O



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:350575 HCAPLUS

DOCUMENT NUMBER: 138:112172

TITLE: Dependence of complex formation between DNA and cationic polymers on structure: a microcalorimetric study

AUTHOR(S): Rungsardthong, U.; Ehtezazi, T.; Garnett, M. C.; Bignotti, F.; Armes, S. P.; Stolnik, S.

CORPORATE SOURCE: School of Pharmaceutical Sciences, University of Nottingham, Nottingham, NG7 2RD, UK

SOURCE: Proceedings - 28th International Symposium on Controlled Release of Bioactive Materials and 4th Consumer & Diversified Products Conference, San Diego, CA, United States, June 23-27, 2001 (2001), Volume 2, 1205-1206. Controlled Release Society: Minneapolis, Minn.

CODEN: 69CNY8

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Cationic polymer-DNA interactions have been evaluated to det. their thermodyn. parameters and the effect of polymer structure on complex formation for non-viral DNA delivery.

CC 63-5 (Pharmaceuticals)

IT 61482-71-1 **451446-57-4** 487021-91-0

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(dependence of complex formation between DNA and cationic polymers on structure)

IT **451446-57-4**

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(dependence of complex formation between DNA and cationic polymers on structure)

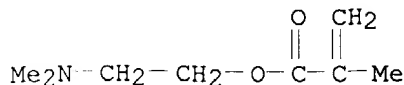
RN 451446-57-4 HCAPLUS

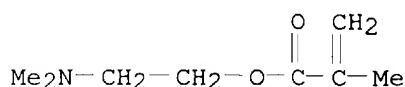
CN 2-Propenoic acid, 2-methyl-, 2-(diethylamino)ethyl ester, polymer with 2-(dimethylamino)ethyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 2867-47-2

CMF C8 H15 N O2

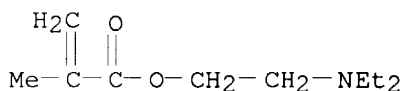




CM 2

CRN 105-16-8

CMF C10 H19 N O2



CM 3

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:346935 HCAPLUS

DOCUMENT NUMBER: 138:107087

TITLE: Supramolecular association of diblock copolymers prepared by atom transfer radical polymerization
AUTHOR(S): Ranger, M.; Jones, M.-C.; Yessine, M.-A.; Leroux, J.-C.

CORPORATE SOURCE: Faculty of Pharmacy, University of Montreal, Montreal, QC, H3C 3J7, Can.

SOURCE: Proceedings - 28th International Symposium on Controlled Release of Bioactive Materials and 4th Consumer & Diversified Products Conference, San Diego, CA, United States, June 23-27, 2001 (2001), Volume 1, 445-446. Controlled Release Society: Minneapolis, Minn.

CODEN: 69CNY8

DOCUMENT TYPE: Conference

LANGUAGE: English

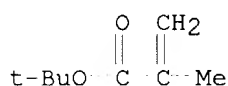
AB Diblock nonionic and amphiphilic, and ionic copolymers were prepd. by atom transfer radical polymn. (ATRP). They were then characterized with regard to their ability to self-assoc. in aq. solns.

CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36

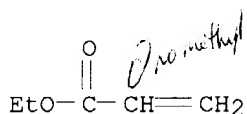
IT **386737-64-ODP**, hydrolyzed **386737-65-1P** 386737-67-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(supramol. assocn. of diblock copolymers prepd. by atom transfer

radical polymn.)
 IT **386737-64-ODP**, hydrolyzed **386737-65-1P**
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (supramol. assocn. of diblock copolymers prepd. by atom transfer
 radical polymn.)
 RN 386737-64-0 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethyl
 2-propenoate and oxirane, block (9CI) (CA INDEX NAME)
 CM 1
 CRN 585-07-9
 CMF C8 H14 O2



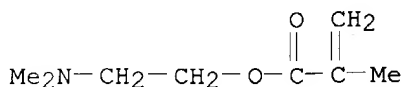
CM 2
 CRN 140-88-5
 CMF C5 H8 O2



CM 3
 CRN 75-21-8
 CMF C2 H4 O



RN 386737-65-1 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with
 ethyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)
 CM 1
 CRN 2867-47-2
 CMF C8 H15 N O2

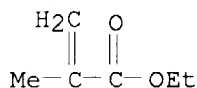


DMAEMA
 ✓

CM 2

CRN 97-63-2

CMF C6 H10 O2



✓ C=Ethyl

CM 3

CRN 75-21-8

CMF C2 H4 O



/

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:318250 HCAPLUS

DOCUMENT NUMBER: 138:210129

TITLE: Influence of polymer architecture on the structure of complexes formed by PEG-tertiary amine methacrylate copolymers and phosphorothioate oligonucleotide

AUTHOR(S): Deshpande, Mangesh C.; Garnett, Martin C.; Vamvakaki, M.; Bailey, Lindsey; Armes, Steven P.; Stolnik, Snjezana

CORPORATE SOURCE: School of Pharmaceutical Sciences, Boots Research Institute, University of Nottingham, Nottingham, NG7 2RD, UK

SOURCE: Journal of Controlled Release (2002), 81(1-2), 185-199
CODEN: JCREEC; ISSN: 0168-3659

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The influence of polymer structure on the characteristics of complexes of a phosphorothioate antisense oligonucleotide (ISIS 5132) was studied, using well-defined cationic copolymers based on 2-(dimethylamino)-Et methacrylate (DMAEMA) and poly(ethylene glycol) (PEG). The three related copolymer structures were: DMAEMA-PEG (a diblock copolymer), DMAEMA-OEGMA [oligo(ethylene glycol) methacrylate] 7 (a brush-type copolymer), and DMAEMA-stat-PEGMA [poly(ethylene glycol) methacrylate] (a comb-type copolymer); each of these were examd. together with DMAEMA homopolymer, which served as a control. The results revealed that all the polymers exhibited good binding ability with the oligonucleotide (ON). Interestingly, the comb-type polymer DMAEMA-stat-PEGMA demonstrated the highest binding ability and DMAEMA homopolymer the lowest, as judged by a dye displacement assay. DMAEMA homopolymer produced large agglomerates of smaller individual complexes as obsd. by optical d., photon correlation

spectroscopy and transmission electron microscopy studies. In contrast, two PEG-block copolymers, DMAEMA-PEG and DMAEMA-OEGMA 7, formed compact complexes of 80-150 nm which had good long-term colloidal stability. This is attributed to the steric stabilization effect of the PEG chains on the ON-copolymer complexes. These two copolymers are believed to form complexes with ON that have a micellar structure. Comb-type DMAEMA-stat-PEGMA copolymer formed highly sol. complexes with the ON that did not phase sep. from the buffer soln. This study clearly demonstrates that varying the copolymer architecture allows access to a range of ON complexes. In vitro cytotoxicity expts. on HepG2 cells showed that all of the tertiary amine methacrylate copolymers displayed lower cytotoxicity than the control poly(L-lysine).

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 35

IT 260426-23-1

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(diblock; polymer structure effect on complexation of antisense phosphorothioate oligonucleotide with polyelectrolyte)

IT 260426-23-1

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(diblock; polymer structure effect on complexation of antisense phosphorothioate oligonucleotide with polyelectrolyte)

RN 260426-23-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with oxirane, monomethyl ether, block (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

H₃C—OH

CM 2

CRN 213599-36-1

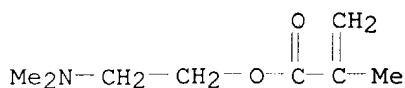
CMF (C8 H15 N O2 . C2 H4 O)x

CCI PMS

CM 3

CRN 2867-47-2

CMF C8 H15 N O2



CM 4

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:806166 HCAPLUS

DOCUMENT NUMBER: 136:86129

TITLE: From well-defined diblock copolymers prepared by a versatile atom transfer radical polymerization method to supramolecular assemblies

AUTHOR(S): Ranger, Maxime; Jones, Marie-Christine; Yessine, Marie-Andree; Leroux, Jean-Christophe

CORPORATE SOURCE: Canadian Research Chair in Drug Delivery, Faculty of Pharmacy, University of Montreal, Montreal, QC, H3C 3J7, Can.

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2001), 39(22), 3861-3874

CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The synthesis of well-defined diblock copolymers by atom transfer radical polymn. (ATRP) was explored in detail for the development of new colloidal carriers. The ATRP technique allowed the prepn. of diblock copolymers of poly(ethylene glycol) (PEG) (no.-av. mol. wt.: 2000) and ionic or nonionizable hydrophobic segments. Using monofunctionalized PEG macroinitiator, ionizable and hydrophobic monomers were polymd. to obtain the diblock copolymers. This polymn. method provided good control over mol. wts. and mol. wt. distributions, with monomer conversions as high as 98%. Moreover, the copolymn. of hydrophobic and ionizable monomers using the PEG macroinitiator made it possible to modulate the physicochem. properties of the resulting polymers in soln. Depending on the length and nature of the hydrophobic segment, the nonionic copolymers could self-assemble in water into nanoparticles or polymeric micelles. For example, the copolymers having a short hydrophobic block ($5 < \text{d.p.} < 9$) formed polymeric micelles in aq. soln., with an apparent crit. assocn. concn. between 2 and 20 mg/L. The interchain assocn. of PEG-based polymethacrylic acid derivs. was found to be pH-dependent and occurred at low pH. The amphiphilic and nonionic copolymers could be suitable for the solubilization and delivery of water-insol. drugs, whereas the ionic diblock copolymers offer promising characteristics for the delivery of electrostatically charged compds. (e.g., DNA) through the formation of polyion complex micelles. Thus, ATRP represents a promising technique for the design of new multiblock copolymers in drug delivery.

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 63

IT 108967-97-1P, Oxirane-methyl methacrylate block copolymer 122991-35-9DP,

Oxirane-tert-butyl methacrylate block copolymer, hydrolyzed
 122991-35-9P, Oxirane-tert-butyl methacrylate block copolymer
 213599-36-1P, Oxirane-2-(N,N-dimethylamino)ethyl methacrylate block
 copolymer **386737-64-0DP**, Oxirane-ethyl acrylate-tert-butyl
 methacrylate block copolymer, hydrolyzed **386737-64-0P**,
 Oxirane-ethyl acrylate-tert-butyl methacrylate block copolymer
386737-65-1P, Oxirane-ethyl methacrylate-2-(N,N-
 dimethylamino)ethyl methacrylate block copolymer **386737-66-2P**,
 Oxirane-2-(N,N-dimethylamino)ethyl methacrylate block copolymer, compd.
 with iodomethane 386737-67-3P, Oxirane-ethyl methacrylate-2-(N,N-
 dimethylamino)ethyl methacrylate block copolymer, compd. with iodomethane
 386756-35-0P, Oxirane-ethyl acrylate block copolymer 386756-36-1P,
 Oxirane-ethyl methacrylate block copolymer **386756-37-2DP**,
 hydrolyzed **386756-37-2P**, Oxirane-methyl methacrylate-tert-butyl
 methacrylate block copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (atom transfer radical polymn. method for prepn. of diblock copolymers
 and their micelles)

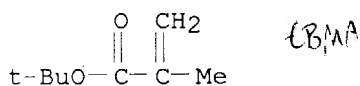
IT **386737-64-0DP**, Oxirane-ethyl acrylate-tert-butyl methacrylate
 block copolymer, hydrolyzed **386737-64-0P**, Oxirane-ethyl
 acrylate-tert-butyl methacrylate block copolymer **386737-65-1P**,
 Oxirane-ethyl methacrylate-2-(N,N-dimethylamino)ethyl methacrylate block
 copolymer **386737-66-2P**, Oxirane-2-(N,N-dimethylamino)ethyl
 methacrylate block copolymer, compd. with iodomethane
386756-37-2DP, hydrolyzed **386756-37-2P**, Oxirane-methyl
 methacrylate-tert-butyl methacrylate block copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (atom transfer radical polymn. method for prepn. of diblock copolymers
 and their micelles)

RN 386737-64-0 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethyl
 2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 585-07-9

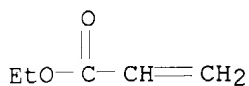
CMF C8 H14 O2



CM 2

CRN 140-88-5

CMF C5 H8 O2



CM 3

CRN 75-21-8

CMF C2 H4 O



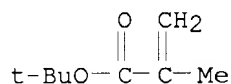
RN 386737-64-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethyl 2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 585-07-9

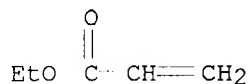
CMF C8 H14 O2



CM 2

CRN 140-88-5

CMF C5 H8 O2



CM 3

CRN 75-21-8

CMF C2 H4 O



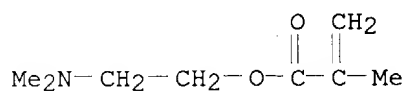
RN 386737-65-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with ethyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 2867-47-2

CMF C8 H15 N O2

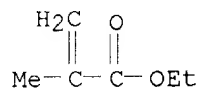


DMAEMA

CM 2

CRN 97-63-2

CMF C6 H10 O2



C = Ethyl

CM 3

CRN 75-21-8

CMF C2 H4 O



RN 386737-66-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with oxirane, block, compd. with iodomethane (9CI) (CA INDEX NAME)

CM 1

CRN 74-88-4

CMF C H3 I



CM 2

CRN 213599-36-1

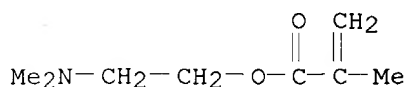
CMF (C8 H15 N O2 . C2 H4 O) x

CCI PMS

CM 3

CRN 2867-47-2

CMF C8 H15 N O2



CM 4

CRN 75-21-8

CMF C2 H4 O



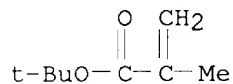
RN 386756-37-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with methyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 585-07-9

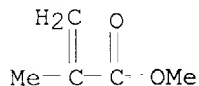
CMF C8 H14 O2



CM 2

CRN 80-62-6

CMF C5 H8 O2



CM 3

CRN 75-21-8

CMF C2 H4 O



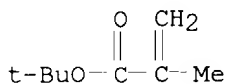
RN 386756-37-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with methyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 585-07-9

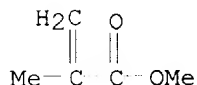
CMF C8 H14 O2



CM 2

CRN 80-62-6

CMF C5 H8 O2



CM 3

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT: 75 THERE ARE 75 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:107528 HCAPLUS

DOCUMENT NUMBER: 134:296363

TITLE: Synthesis of novel shell cross-linked micelles with hydrophilic cores

AUTHOR(S): Butun, V.; Armes, S. P.

CORPORATE SOURCE: School of Chemistry, Physics and Environmental Science, University of Sussex, Brighton, BN1 9QJ, UK

SOURCE: ACS Symposium Series (2001), 780 (Stimuli-Responsive Water Soluble and Amphiphilic Polymers), 115-139
CODEN: ACSMC8; ISSN: 0097-6156

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We review our recent progress in the synthesis of novel shell crosslinked knedel (SCK) micelles. The reversible self-assembly of hydrophilic-hydrophilic block copolymers in aq. media is exploited in order to develop three new classes of SCK micelles. In each case the micelle cores can be tuned to become hydrophilic or hydrophobic depending

on the soln. pH, electrolyte concn. or temp. A tertiary amine methacrylate diblock copolymer was used to prep. SCK micelles of 20-40 nm diam., with shell crosslinking being achieved using a bifunctional quaternizing agent. Secondly, an ampholytic diblock copolymer was used to prep. zwitterionic SCK micelles with two distinct particle morphologies: Type I micelles, which comprise cationic coronas and anionic cores and Type II micelles, which comprise anionic coronas and cationic cores (2). Finally, a novel tailor-made triblock copolymer was synthesized and utilized in SCK micelle syntheses at high solids (> 10%) (3). This "proof-of-concept" expt. suggests that com. applications of these fascinating nanostructures may be a realistic possibility.

CC 36-5 (Physical Properties of Synthetic High Polymers)

IT 152067-49-7 192320-33-5 **255725-81-6** 332387-53-8

RL: PRP (Properties)

(synthesis of shell crosslinked micelles with hydrophilic cores)

IT **255725-81-6**

RL: PRP (Properties)

(synthesis of shell crosslinked micelles with hydrophilic cores)

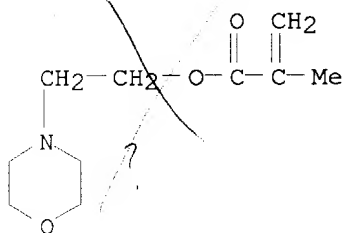
RN 255725-81-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with 2-(4-morpholinyl)ethyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 2997-88-8

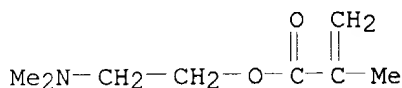
CMF C10 H17 N O3



CM 2

CRN 2867-47-2

CMF C8 H15 N O2



CM 3

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:619299 HCAPLUS

DOCUMENT NUMBER: 134:17751

TITLE: Use of oxyanion-initiated polymerization for the synthesis of amine methacrylate-based homopolymers and block copolymers

AUTHOR(S): de Paz Banez, M. V.; Robinson, K. L.; Butun, V.; Armes, S. P.

CORPORATE SOURCE: Sch. Chem., Physics and Environmental Science, University of Sussex, Falmer, Brighton, BN1 9QJ, UK

SOURCE: Polymer (2000), Volume Date 2001, 42(1), 29-37

CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A series of amine methacrylate homopolymers, diblock copolymers and triblock copolymers has been synthesized using oxyanion-initiated polymn. The amine methacrylate monomers of interest were 2-(dimethylamino)ethyl methacrylate (DMA), 2-(diethylamino)ethyl methacrylate (DEA), 2-(N-morpholino)ethyl methacrylate (MEMA) and (tert-butylamino)ethyl methacrylate (BAE). In most expts. potassium benzyl alcoholate was utilized as an initiator since this facilitated both UV GPC studies and end group anal. using ¹H NMR spectroscopy. For the homopolymn. of DMA, mol. wts. increased linearly with conversion and polydispersities were reasonably narrow. Together with successful block copolymer formation, this constitutes good evidence for the "living" character of oxyanion-initiated polymn. Most of the diblocks are novel copolymers and selected copolymers undergo reversible temp.-induced micellization in aq. media. NMR studies confirmed that the DMA residues of a DMA-BAE diblock copolymer could be selectively quaternized using a stoichiometric amt. of Me iodide under mild conditions. Finally, shell crosslinked micelles could be prep'd. from ABC triblock copolymers. The C block formed the core, the B block contained cross-linkable residues and the A block acted as a steric stabilizer and prevented inter-micelle aggregation even when the crosslinking chem. was carried out at high copolymer concns.

CC 35-3 (Chemistry of Synthetic High Polymers)

IT **255725-81-6P**, 2-(Dimethylamino)ethyl methacrylate-ethylene oxide-2-(N-morpholino)ethyl methacrylate block copolymer
309917-50-8P, (tert-Butylamino)ethyl methacrylate-2-(dimethylamino)ethyl methacrylate-ethylene oxide block copolymer
 309917-51-9P, 2-(Diethylamino)ethyl methacrylate-2-(dimethylamino)ethyl methacrylate-2-(N-morpholino)ethyl methacrylate block copolymer
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (triblock; oxyanion-initiated polymn. for prepn. of amine methacrylate-based homopolymers and block copolymers)

IT **255725-81-6P**, 2-(Dimethylamino)ethyl methacrylate-ethylene oxide-2-(N-morpholino)ethyl methacrylate block copolymer
309917-50-8P, (tert-Butylamino)ethyl methacrylate-2-(dimethylamino)ethyl methacrylate-ethylene oxide block copolymer

RL: SPN (Synthetic preparation); PREP (Preparation)
 (triblock; oxanion-initiated polymn. for prepn. of amine
 methacrylate-based homopolymers and block copolymers)

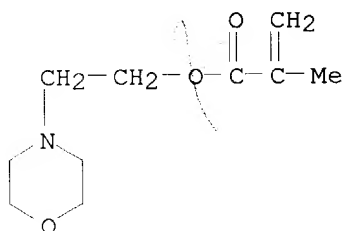
RN 255725-81-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with
 2-(4-morpholinyl)ethyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA
 INDEX NAME)

CM 1

CRN 2997-88-8

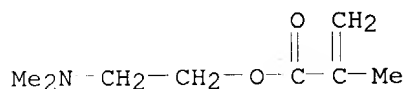
CMF C10 H17 N O3



CM 2

CRN 2867-47-2

CMF C8 H15 N O2



CM 3

CRN 75-21-8

CMF C2 H4 O



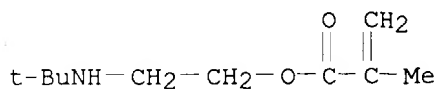
RN 309917-50-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with
 2-[(1,1-dimethylethyl)amino]ethyl 2-methyl-2-propenoate and oxirane, block
 (9CI) (CA INDEX NAME)

CM 1

CRN 3775-90-4

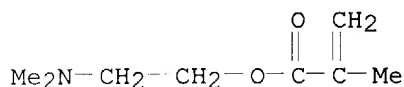
CMF C10 H19 N O2



CM 2

CRN 2867-47-2

CMF C8 H15 N O2



CM 3

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:780679 HCAPLUS

DOCUMENT NUMBER: 132:108371

TITLE: Synthesis of Shell Cross-Linked Micelles at High Solids in Aqueous Media

AUTHOR(S): Buetuen, V.; Wang, X.-S.; Banez, M. V. de Paz; Robinson, K. L.; Billingham, N. C.; Armes, S. P.; Tuzar, Z.

CORPORATE SOURCE: School of Chemistry Physics and Environmental Science, University of Sussex, Falmer Brighton, BN1 9QJ, UK

SOURCE: Macromolecules (2000), 33(1), 1-3

CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Well-defined shell crosslinked knedel (SCK) micelles in relative concd. soln. (10% solids) were prepd. in aq. media using ethylene oxide-2-(dimethylamino)ethyl methacrylate-2-(N-morpholino)ethyl methacrylate triblock copolymer. Inner shell crosslinking was achieved in 1.0 M Na2SO4 at 20.degree. for 3-7 days using 1,2-bis(2-iodoethoxy)ethane. Static light scattering studies of dild. SCK micelles gave a radius of gyration of 21 +/- 2 nm and a micelle mass of approx. 11.5 .times. 106 g mol-1. The particles had a spherical morphol., a high degree of dispersion, and a mean no.-av. particle diam. of .apprx.40 nm.

CC 35-4 (Chemistry of Synthetic High Polymers)

IT 255725-81-6P, 2-(Dimethylamino)ethyl methacrylate-2-(N-morpholino)ethyl methacrylate-ethylene oxide block copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (triblock; prepn. of shell cross-linked micelles at high solids in aq. media)

IT 255725-81-6P, 2-(Dimethylamino)ethyl methacrylate-2-(N-morpholino)ethyl methacrylate-ethylene oxide block copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (triblock; prepn. of shell cross-linked micelles at high solids in aq. media)

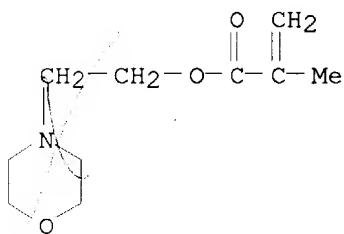
RN 255725-81-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with 2-(4-morpholinyl)ethyl 2-methyl-2-propenoate and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 2997-88-8

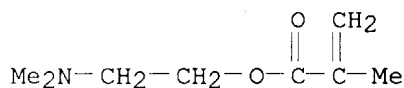
CMF C10 H17 N O3



CM 2

CRN 2867-47-2

CMF C8 H15 N O2



CM 3

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:558801 HCAPLUS

DOCUMENT NUMBER: 132:208428

TITLE: Synthesis and aqueous solution properties of novel hydrophilic/hydrophilic block copolymers based on tertiary amine methacrylates and poly (ethylene oxide)

AUTHOR(S): Bailey, Lindsey; Vamvakaki, Maria; Billingham, Norman C.; Armes, Steven P.

CORPORATE SOURCE: School of Chemistry, Physics and Environmental Science, University of Sussex, Falmer Brighton, BN1 9QJ, UK

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1999), 40(2), 263-264

CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Polyethylene glycol (PE) (in THF) was mixed with potassium naphthalene to form a K alcoholate macroinitiator and then with 2-(dimethylamino)ethyl methacrylate (DMA) or 2-(diethylamino)ethyl methacrylate (DEA) to form PE-DMA or PE-DEA block copolymers. All of the PE-DMA block copolymers were molecularly dissolved in water at room temp., and some underwent reversible micellization at temps. below the cloud point.; the micelles are apparently formed with polyDMA cores and polyPE coronas. Surface tension measurements were done and discussed. The PE-DEA block copolymers were fully sol. in acidic soln.; at pH 9, however, the signals corresponding to DEA residues completely disappeared from the NMR spectrum, indicating complete desolvation and therefore suggesting that the polyDEA chains form dehydrated micelle cores.

CC 36-7 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 35

IT **260426-23-1P** 260426-24-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis and aq. soln. properties of hydrophilic/hydrophilic block copolymers based on tertiary amine methacrylates and poly(ethylene oxide))

IT **260426-23-1P**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis and aq. soln. properties of hydrophilic/hydrophilic block copolymers based on tertiary amine methacrylates and poly(ethylene oxide))

RN 260426-23-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with oxirane, monomethyl ether, block (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

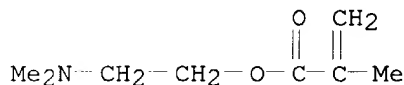
H3C-OH

CM 2

CRN 213599-36-1
CMF (C8 H15 N O2 . C2 H4 O)x
CCI PMS

CM 3

CRN 2867-47-2
CMF C8 H15 N O2



CM 4

CRN 75-21-8
CMF C2 H4 O



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:562469 HCAPLUS

DOCUMENT NUMBER: 125:248691

TITLE: Anionic synthesis of block and heteroarm star-branched copolymers using 1,1-diphenylethylene-functionalized poly(ethylene oxide) macromonomers

AUTHOR(S): Quirk, Roderic P.; Kim, Young J.

CORPORATE SOURCE: Maurice Morton Institute of Polymer Science, University of Akron, Akron, OH, 44325, USA

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1996), 37(2), 643-644
CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In order to investigate the properties of graft copolymers with controlled nos. and distributions of well-defined branches, methods were developed to prep. macromonomers with non-homopolymerizable functional groups. One target functional group is a 1,1-diphenylethylene-type unit at the macromonomer chain end. Thus, 1-(4-hydroxypropylphenyl)-1-phenylethylene was metalated with triphenylmethylpotassium and then used to initiate ethylene oxide polymn. followed by quenching with Me iodide. The resulting 1,1-diphenylethylene-functionalized poly(ethylene oxide) macromonomer was reacted quant. with polystyryl lithium to form polystyrene-block-poly(ethylene oxide) after termination. Alternatively, the intermediate 1,1-diphenylalkyllithium group at the block interface

provided the corresponding hetero, three-armed, star-branched polymers. The scope and limitations of this macromonomer methodol. is discussed.

CC 35-7 (Chemistry of Synthetic High Polymers)

IT **182226-69-3P**, tert-Butyl methacrylate-ethylene oxide-styrene block copolymer
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (star-block; anionic synthesis of heteroarm star-branched copolymers via diphenylalkyllithium adducts using diphenylethylene-functionalized poly(ethylene oxide) macromonomers)

IT **182226-69-3P**, tert-Butyl methacrylate-ethylene oxide-styrene block copolymer
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (star-block; anionic synthesis of heteroarm star-branched copolymers via diphenylalkyllithium adducts using diphenylethylene-functionalized poly(ethylene oxide) macromonomers)

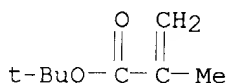
RN 182226-69-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethenylbenzene and oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 585-07-9

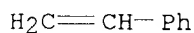
CMF C8 H14 O2



CM 2

CRN 100-42-5

CMF C8 H8



CM 3

CRN 75-21-8

CMF C2 H4 O



modified copolymer

Schnizer 09/877,999

March 5, 2004

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 OR L45)
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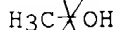
L52 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:853194 HCAPLUS
 DOCUMENT NUMBER: 139:339170
 TITLE: Paper for offset printing and ink jet printing
 INVENTOR(S): Sato, Tsutomu; Soma, Toru; Asano, Tadashi; Sato,
 Yoshiko
 PATENT ASSIGNEE(S): Hokuetsu Paper Mills, Ltd., Japan; Space Environmental
 Technology Co., Inc.
 SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003306888	A2	20031031	JP 2002-116605	20020418
PRIORITY APPLN. INFO.:			JP 2002-116605	20020418
AB Paper is sized with water-sol. modified polyamine resins and cationic vinyl polymers. Thus, a size contained dimethylamine-epichlorohydrin copolymer 3.0, N,N-dimethylaminoethyl methacrylate Me chloride salt-methoxypolyethylene glycol methacrylate copolymer 3.0, and water 94.0%.				
IC ICM D21H019-24				
ICS B41J002-01; B41M005-00; D21H019-20				
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)				
IT 25988-97-0P, Dimethylamine-epichlorohydrin copolymer 26427-01-0P				
88907-36-2P, Diethylamine-epichlorohydrin copolymer 111263-40-2P,				
Dibutylamine-epichlorohydrin copolymer 501930-16-1P 501931-39-1P				
616873-03-1P 616873-04-2P 616873-05-3P 616873-06-4P 616873-07-5P				
616874-47-6P				
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				
(sizes contg. water-sol. modified polyamine resins and cationic vinyl polymers. for paper for offset printing and ink jet printing)				
IT 501931-39-1P				
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				
(sizes contg. water-sol. modified polyamine resins and cationic vinyl polymers. for paper for offset printing and ink jet printing)				
RN 501931-39-1 HCAPLUS				
CN Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)				

CM 1

CRN 67-56-1

CMF C H4 O



CM 2

CRN 194717-69-6

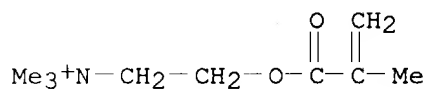
CMF (C9 H18 N O2 . C2 H4 O . Cl)x

CCI PMS

CM 3

CRN 5039-78-1

CMF C9 H18 N O2 . Cl

● Cl⁻

CM 4

CRN 75-21-8

CMF C2 H4 O



L52 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:508702 HCAPLUS

DOCUMENT NUMBER: 139:87019

TITLE: Quick-drying-imparting agents and quick-drying detergents and quick-drying finishing agents

INVENTOR(S): Miyake, Miyuki

PATENT ASSIGNEE(S): Lion Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 2003183694	A2	20030703	JP 2001-384210	20011218
PRIORITY APPLN. INFO.:				JP 2001-384210	20011218
AB	The title materials contain copolymers of 30-99% (alkyl)acrylic acid quaternary ammonium salts or vinyl group-contg. quaternary ammonium salts with 1-70% polyoxyalkylene mono(alkyl)acrylates. Thus, a dishwashing detergent contained 0.5% 40:60 diethylene glycol Me ether methacrylate-trimethylammoniummethyl methacrylate chloride copolymer.				
IC	ICM C11D003-37				
CC	ICS A61K007-075; A61K007-50; C08F220-26; C08F220-34; C08F226-02				
	46-6 (Surface Active Agents and Detergents)				
	Section cross-reference(s): 62				
IT	111740-38-6P	347423-62-5P	474004-62-1P	501930-16-1P	
	501931-39-1P	552867-18-2P	552867-19-3P	552867-20-6P	
	552867-21-7P	552888-63-8P	552888-65-0P		
	RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				
	(quick-drying detergents and quick-drying finishing agents contg. copolymers of quaternary ammonium (alkyl)acrylates and vinyl group-contg. quaternary ammonium salts and polyoxyalkylene mono(alkyl)acrylates)				
IT	501931-39-1P				
	RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				
	(quick-drying detergents and quick-drying finishing agents contg. copolymers of quaternary ammonium (alkyl)acrylates and vinyl group-contg. quaternary ammonium salts and polyoxyalkylene mono(alkyl)acrylates)				
RN	501931-39-1 HCAPLUS				
CN	Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)				
CM	1				
CRN	67-56-1				
CMF	C H4 O				

H3C⁺OH

CM 2

CRN 194717-69-6

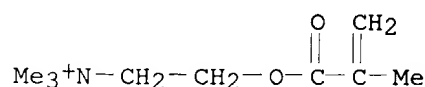
CMF (C9 H18 N O2 . C2 H4 O . Cl)x

CCI PMS

CM 3

CRN 5039-78-1

CMF C9 H18 N O2 . Cl

● Cl⁻

CM 4

CRN 75-21-8

CMF C2 H4 O



L52 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:216786 HCAPLUS

DOCUMENT NUMBER: 138:245651

TITLE: Yellowing-resistant ink-jet printing sheets containing cationic polymers in ink-receiving layers

INVENTOR(S): Tsujibata, Shigetomo; Nakano, Ryoichi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 25 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003080838	A2	20030319	JP 2001-279265	20010914

PRIORITY APPLN. INFO.: JP 2001-279265 20010914

AB The sheets have ink receptor layers which are formed from dispersions contg. contg. microparticulate inorg. pigments (e.g., silica, pseudo boehmite), (meth)acrylate polymers having CH₂CR₁[Q(R₂O)m(R₃O)nR₄] (R₁ = H, Me; R₂, R₃ = alkylene; R₄ = H, C₁-18 alkyl, aryl, aralkyl, OCOR'; Q = CO₂, CONR'', O (R', R'' = H, alkyl, aralkyl, aryl); m, n .gtoreq. 1) and units having cationic groups, and optionally water-sol. resins such as PVA.

IC ICM B41M005-00
ICS B41J002-01; C09D125-18; C09D129-04; C09D129-10; C09D133-14; C09D133-24; C09D139-00; C09D165-00

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 43

IT **501931-39-1DP**, Dimethylaminoethyl methacrylate methochloride-oxirane graft copolymer methyl ether, Me ether
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(light- and blurring-resistant ink-jet receptor sheets contg. polyoxyalkylene-grafted cationic polymers)

IT 501931-39-1DP, Dimethylaminoethyl methacrylate
methochloride-oxirane graft copolymer methyl ether, Me ether
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(light- and blurring-resistant ink-jet receptor sheets contg.
polyoxyalkylene-grafted cationic polymers)
RN 501931-39-1 HCAPLUS
CN Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-,
chloride, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1
CMF C H4 O

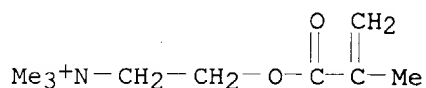


CM 2

CRN 194717-69-6
CMF (C9 H18 N O2 . C2 H4 O . Cl)x
CCI PMS

CM 3

CRN 5039-78-1
CMF C9 H18 N O2 . Cl



TMAEMA

● Cl⁻

CM 4

CRN 75-21-8
CMF C2 H4 O



L52 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:342634 HCAPLUS
DOCUMENT NUMBER: 131:116640
TITLE: Variations in the diallyldimethylammonium chloride

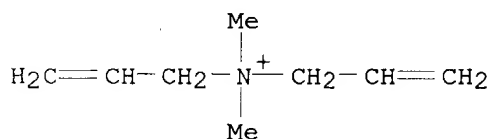
(DADMAC) polymers architectures. PEG/DADMAC blocks and partially quaternized polymers
 AUTHOR(S): Tirelli, Nicola; Hunkeler, David J.
 CORPORATE SOURCE: Laboratory Polymers Biomaterials, Department Chemistry, Swiss Federal Institute Technology, Lausanne, CH-1015, Switz.
 SOURCE: Macromolecular Chemistry and Physics (1999), 200(5), 1068-1073
 CODEN: MCHPES; ISSN: 1022-1352
 PUBLISHER: Wiley-VCH Verlag GmbH
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB New DADMAC-based macromol. architectures were prepd., varying the permanent charge distribution in the polycation structure. DADMAC and PEG-contg. block copolymers with (AB)_n and ABCBA structures were synthesized via condensation together with thermal and redox radical polymn. Polymers with a randomly reduced charge d. were, on the other hand, obtained via polymer-analogous reactions based on the de-quaternarization of the ammonium groups.
 CC 35-8 (Chemistry of Synthetic High Polymers)
 IT 26062-79-3DP, dequaternized 204906-33-2P **232616-96-5P**
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. of diallyldimethylammonium chloride partially quaternized and multiblock polymers with poly(ethylene glycol))
 IT **232616-96-5P**
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. of diallyldimethylammonium chloride partially quaternized and multiblock polymers with poly(ethylene glycol))
 RN 232616-96-5 HCAPLUS
 CN 2-Propen-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, polymer with oxirane and N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]ethanaminium chloride, block (9CI) (CA INDEX NAME)

CM 1

CRN 7398-69-8

CMF C8 H16 N . Cl

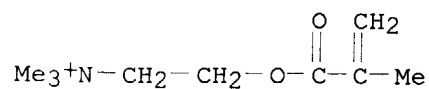


● Cl⁻

CM 2

CRN 5039-78-1

CMF C9 H18 N O2 . Cl

● Cl⁻

CM 3

CRN 75-21-8

CMF C2 H4 O



REFERENCE COUNT:

25

THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT